MARKET FORGE
INDUSTRIES INC.

ST-5G
GAS COUNTERTOP CONVECTION STEAMER
PARTS AND SERVICE MANUAL

EFFECTIVE JUNE 12, 2015

Superseding All Previous Parts Lists.
The Company reserves the right to make substitution in the event that items specified are not available.
ERRORS: Descriptive and/or typographic errors are subject to correction.

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GENERAL TROUBLESHOOTING GUIDE

PROBLEM / PROBABLE CAUSE	REMEDY
1. 1. Cooking Indicator Light Fails to Light with Timer Set.	
a. Main power circuit breaker tripped.	Located external circuit breaker for incoming power and place in ON position.
b. Door interlock switch contacts not closed.	Shut cooker door to close switch contacts. Check alignment of door with switch.
c. Door interlock switch faulty.	Replace switch.
d. Indicator light burned out.	Replace light.
e. Faulty timer contacts.	Replace timer.
f. Faulty wiring.	Inspect condition of wire and tightness of all connections. Correct as needed.
2. Steam Fails to Enter Cooking Compartment with Cooking Indicator Light On.	
a. Faulty wiring.	Inspect condition of wire and tightness of all connections. Correct as needed.
3. Steam Enters Compartment Continuously. Timer Dial Not Turning.	
a. Constant steam position.	Move knob to timing location.
b. Faulty thermostatic switch.	Replace switch.
c. Faulty timer motor.	Replace timer.
d. Faulty wiring.	Inspect condition of wire and tightness of all connections. Correct as needed.
4. Steam Continues to Flow into Compartment and/or Buzzer Fails to Sound at End of Timer Setting.	
a. Faulty timer contacts.	Replace timer.
b. Faulty buzzer.	Replace buzzer.
c. Faulty wiring.	Inspect condition of wire and tightness of all connections. Correct as needed.
5. Steam Flows Continuously from Boiler Drain Line with Cooker in Operation.	
a. Cold water not connected.	Turn on external shut-off valve.
b. Faulty cooling valve.	Replace cooling valve.
c. Faulty wiring.	Inspect condition of wire and tightness of all connections. Correct as needed.
6. Door Leaks.	
a. Damaged door gasket.	Check gasket for cuts and replace as needed.
b. Clogged compartment drain or plumbing.	Remove screen and clean drain line or plumbing.
7. Water Flows into Cooking Compartment.	
a. Level probe short circuited.	Check and correct.
b. Scale build-up on probe.	Clean all probes.
c. Water fill solenoid valve.	Plugged, defective, clean or replace.
8. Water Accumulates in Compartment.	
a. Plugged compartment drain.	Remove screen and clean drain line.
9. Water Flows into Drain During Shut-Down.	
a. Cooling valve does not close.	Check valve for foreign material or damage.

GENERAL TROUBLESHOOTING GUIDE

PROBLEM / PROBABLE CAUSE	REMEDY
10. Water not Being Supplied to Generator.	
a. Water supply off.	Check incoming water valve is on.
b. Supply water pressure too low.	Call supply agency.
c. Defective water solenoid valve.	Replace or clean.
d. Level probe shorted.	Check and correct.
e. Defective water level control.	Replace.
f. Drain valve is open.	Check valve, clean or replace.
IMPORTANT NOTE: These problems are an indication of severe water conditions which should be corrected immediately to avoid damage to the components and performance of the steamer. Call your Service Agency for Assistance. **ADJUSTMENTS:** All units are adjusted at the factory. in case of operation problems at initial installation, check type of gas supply and manifold pressure and compare it with information on the rating plate.	
11. Burners Do Not Come On.	
a. Gas supply is off.	Locate supply line and turn on.
b. Power switch is off.	Located switch in cabinet and turn on.
c. Probe not sensing water level.	Clean probes, check wiring.
d. Ignitor not functioning.	Check ignition module relay.
e. Combination gas valve not opening.	Check that control knob is in the ON position, check that 120 volts is at the gas valve.
12. Burners Produce Carbon Deposits.	
a. Incorrect orifice size.	Check size and correct.
b. Incorrect gas supply.	Check size and correct.
c. Incorrect gas pressure.	Check gas pressure at manifold. Correct if necessary.
13. Flash Back.	
a. Burning inside mixer tube.	Reduce primary air.
b. Incomplete combustion.	Increase burner input.
c. Sooting of burner.	Increase primary air.
d. Miss-located ignitor.	Adjust ignitor.

IMPORTANT NOTICE: AT LEAST TWICE A YEAR, HAVE AN AUTHORIZED SERVICE PERSON CLEAN AND ADJUST THE UNIT FOR MAXIMUM PERFORMANCE.

ADJUSTMENTS AND SERVICE WORK MAY BE PERFORMED ONLY BY A QUALIFIED TECHNICIAN WHO IS EXPERIENCED IN AND KNOWLEDGEABLE WITH THE OPERATION OF COMMERCIAL GAS COOKING EQUIPMENT. HOWEVER, TO ASSURE YOUR CONFIDENCE, CONTACT YOUR AUTHORIZED SERVICE AGENCY FOR RELIABLE SERVICE, DEPENDABLE ADVICE OR OTHER ASSISTANCE AND FOR GENUINE FACTORY PARTS.

TROUBLESHOOTING

FINDING, UNDERSTANDING AND FIXING THE PROBLEM

Timer Contacts (60 Minute Timer)

Defective timer contacts will result in failure of cooker compartment to operate. When this occurs, remove the control pan and proceed as follows:

1. Turn off power to the cooker at external circuit breaker.
2. Disconnect all five wires from timer terminals.
3. Connect an ohmmeter terminals 1 and 3.
4. Rotate timer dial beyond the “0 minute” point (any setting) to obtain a reading of zero ohms on the ohmmeter. If zero ohm reading cannot be obtained, timer contacts are defective and the timer must be replaced.
5. Move ohmmeter leads to terminals 1 and 4.
6. Rotate timer dial to “0 minute” position (an audible click indicates correct position). If zero ohm reading cannot be obtained, timer contacts are defective and the timer must be replaced.
7. Remove ohmmeter and replace all five leads on timer terminals.

Timer Motor (60 Minute Timer)

A defective timer motor will cause continuous operation in the TIME mode, with the timer dial failing to return to the “0 minute” position. Carefully check motor condition, proceed as follows:

1. Carefully check motor wire leads and tighten lose connections. !! **<u>WARNING:</u> !! USE CARE WHILE WORKING WITH CONTROL PANEL. TERMINALS CARRY 120 VOLTS.**
2. Turn on power to the steamer.’
3. Set timer dial (*any setting beyond “0 minute”*). If operation s correct, the motor will turn the dial toward “0 minute”. If the motor fails to operate, it is defective and the entire timer must be replaced.
4. Shut off power to the cooker.

Door Interlock Switch

Malfunction of the cooker door interlock switch prevents timer indicator light from turning on and steam solenoid from opening when the timer dial is set. If steam does not enter the compartment and the cooking indicator light fails to turn on with the door latch securely engaged, the fault may be in the door interlock switch. Proceed as follows:

1. Turn off power to the cooker.
2. Disconnect wire to the door switch terminals.
3. Connect an ohmmeter between the terminals of the switch.
4. Actuate the switch by closing the cooking compartment door. If zero ohm reading cannot be obtained, timer contacts are defective and the timer must be replaced.
5. Remove the ohmmeter and replace the leads on switch terminals.

Indicator Lights

If the cooker compartment functions correctly, with the single exception that the indicator light fails to light during operation, the fault is a defective indicator light. A “burned out” or defective light is verified by using a AC volt-meter at the leads, with input power on the selector switch in correct position for that timer, the timer set, and the door latches closed. If 120 volts is present, the fault is in the indicator light and requires replacement. If 120 volts is not present, the fault is in the wiring control components (*selector switch, timer or door switch*).

Buzzer

If the buzzer does not sound at the termination of the operator-selected timer setting (timer dial returned to “0 minute” position), the fault may be a defective buzzer. Buzzer operation os verified using an AC volt-meter at buzzer coil connections with input power on a selector switch and coinciding timer dial set at the “0 minute” position. If voltage is 120 volts, the fault is in the buzzer, which must be replaced. If 120 volts is not present, the fault is in the wiring control components (*selector switch or timer*).

Wiring

Using an ohmmeter, wiring continuity between the connections shown on the wiring diagram is readily verified. This is best done in stages, removing only those wires required for each continuity check. As each lead is replaced, it should be checked for evidence of corrosion and cleaned if necessary. All leads must be tightly attached so as to provide a good electrical connection.

TROUBLESHOOTING

Door Gasket Replacement

The cooking compartment door gaskets are made of silicone-type rubber material that is very durable, but subject to wear during normal operation. Should the gasket leak replace it as follows:

1. Open the cooking compartment door.
2. Remove the four screw on the outside of the door frame and remove the door panel assembly.
3. Remove the six screw from the gasket plate in the door panel assembly.
4. Remove the gasket plate and the door gasket from the door panel.
5. Install the new door gasket to the door panel. Replace the gasket plate and six screws.
6. Reassembly the door panel assembly in the door frame using the four screws.
7. Gasket replacement is now complete.

Door may be difficult to close until the gasket has compressed to conform to the door opening. Leaving door closed overnight will compress gasket.

Exterior Panel Removal

⚠ **WARNING**

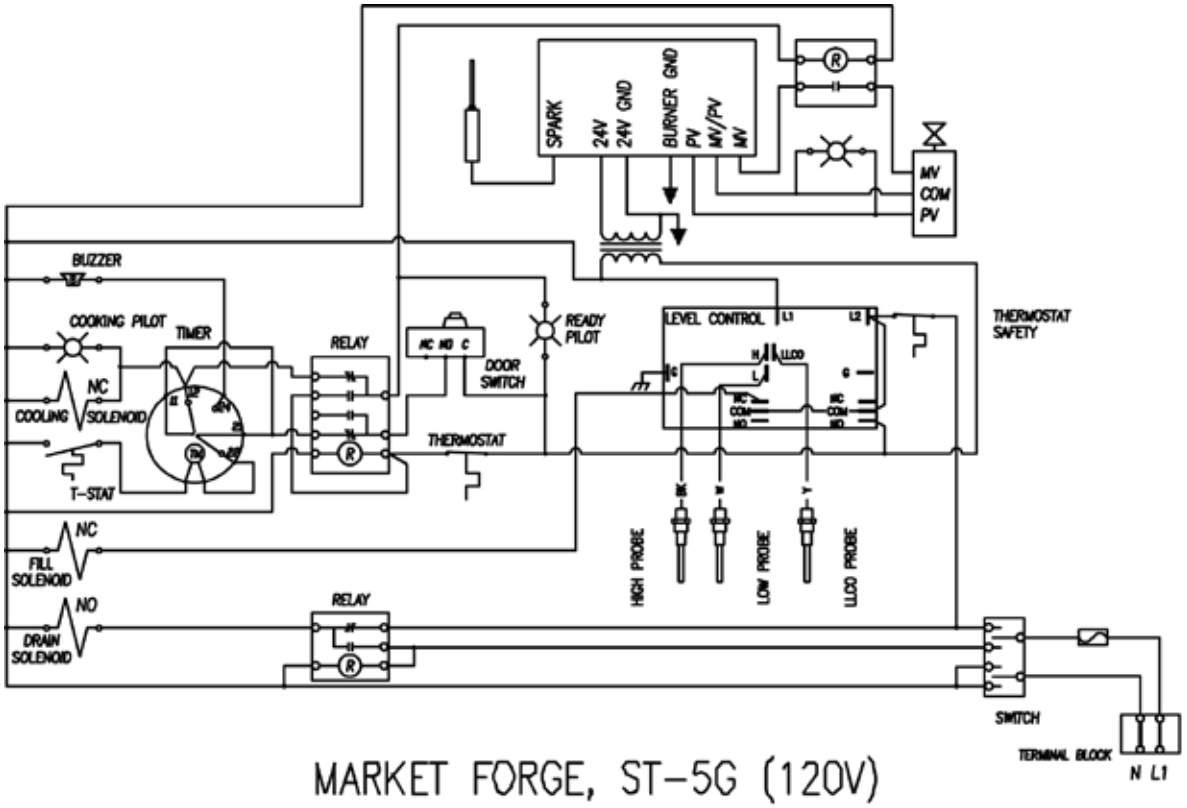
TO PREVENT HAZARD IN SERVICING THE COOKER, BE CERTAIN THAT THE STEAM SUPPLY BOILER IS SHUT DOWN, THE COLD WATER SHUT-OFF VALVE IS CLOSED, AND THE ELECTRICAL DISCONNECT CIRCUIT BREAKER FOR THE COOKER/BOILER UNIT IF OFF BEFORE REMOVING SIDE PANELS.

Access to all internal plumbing and electrical assemblies is from the right side. The right side panel is removed by removing the bottom screws and pushing up on the panel until the lower lip disengages from the frame. Gas control is located on the right side behind the bottom panel. Remove the four screws.

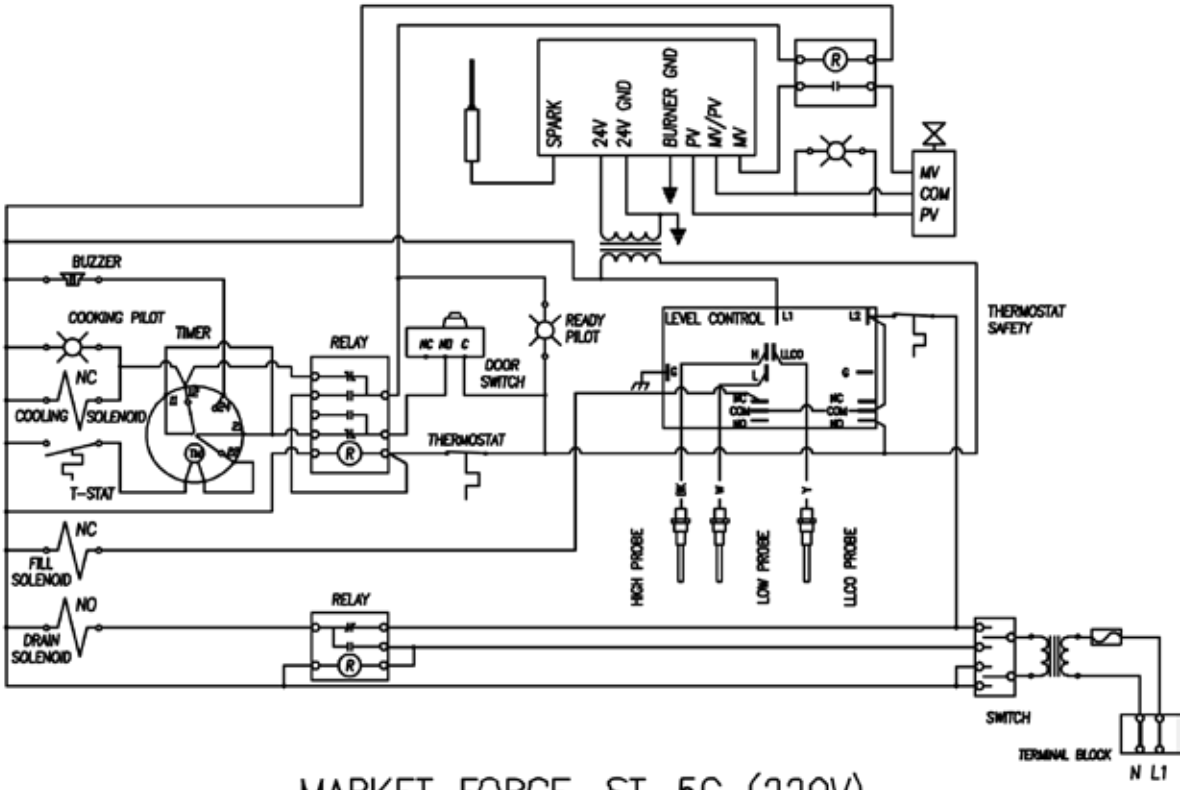
ELECTRICAL FAULT ISOLATION GUIDE

FAILURE	FAULT LOCATION
Will not operate in either CONSTANT STEAM or 60 MINUTE TIMER positions.	a. Incoming power. b. Timer. c. Door interlock switch. d. Wiring.
Operating in CONSTANT STEAM position, but not in 60 MINUTE TIMER position.	a. 60 minute timer. b. Wiring.
Operates in 60 MINUTE TIMER position, but not in CONSTANT STEAM position.	a. Timer. b. Wiring.
With indicator light on and steam solenoid valve open, timer dial fails to turn.	a. Constant steam position. b. Timer motor. c. Wiring.
BUZZER fails to sound at the end of 60 MINUTE TIMER mode.	a. 60 minute timer. b. Buzzer. c. Wiring.
Steam flows continuously from boiler drain line.	a. Cooling valve needs replacing. b. Wiring.

WIRING DIAGRAMS

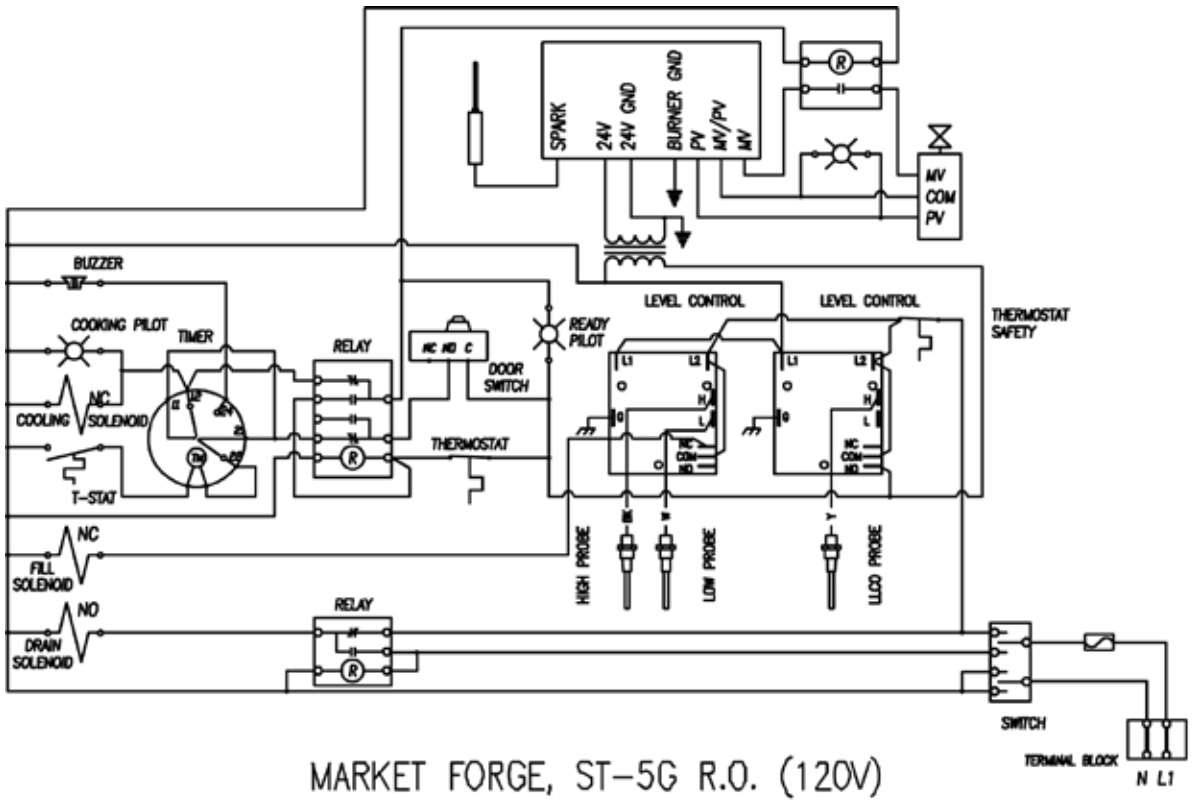


MARKET FORGE, ST-5G (120V)

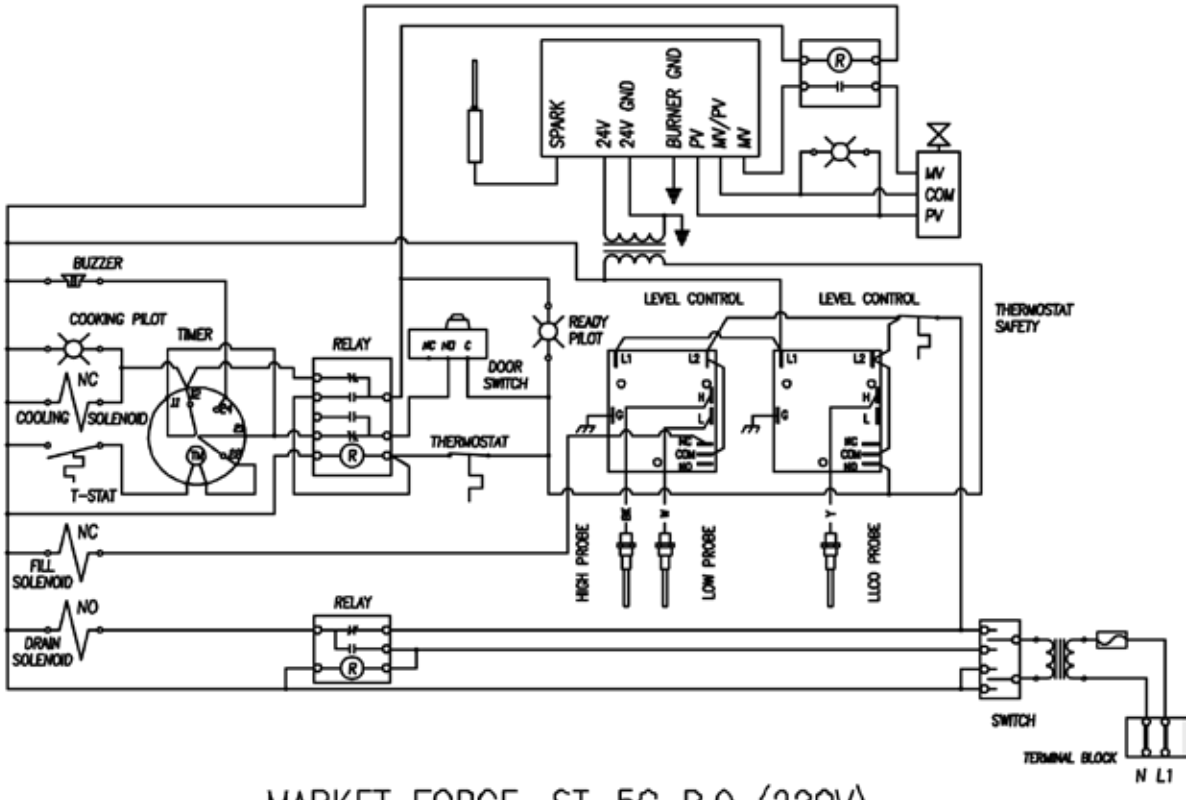


MARKET FORGE, ST-5G (220V)

WIRING DIAGRAMS

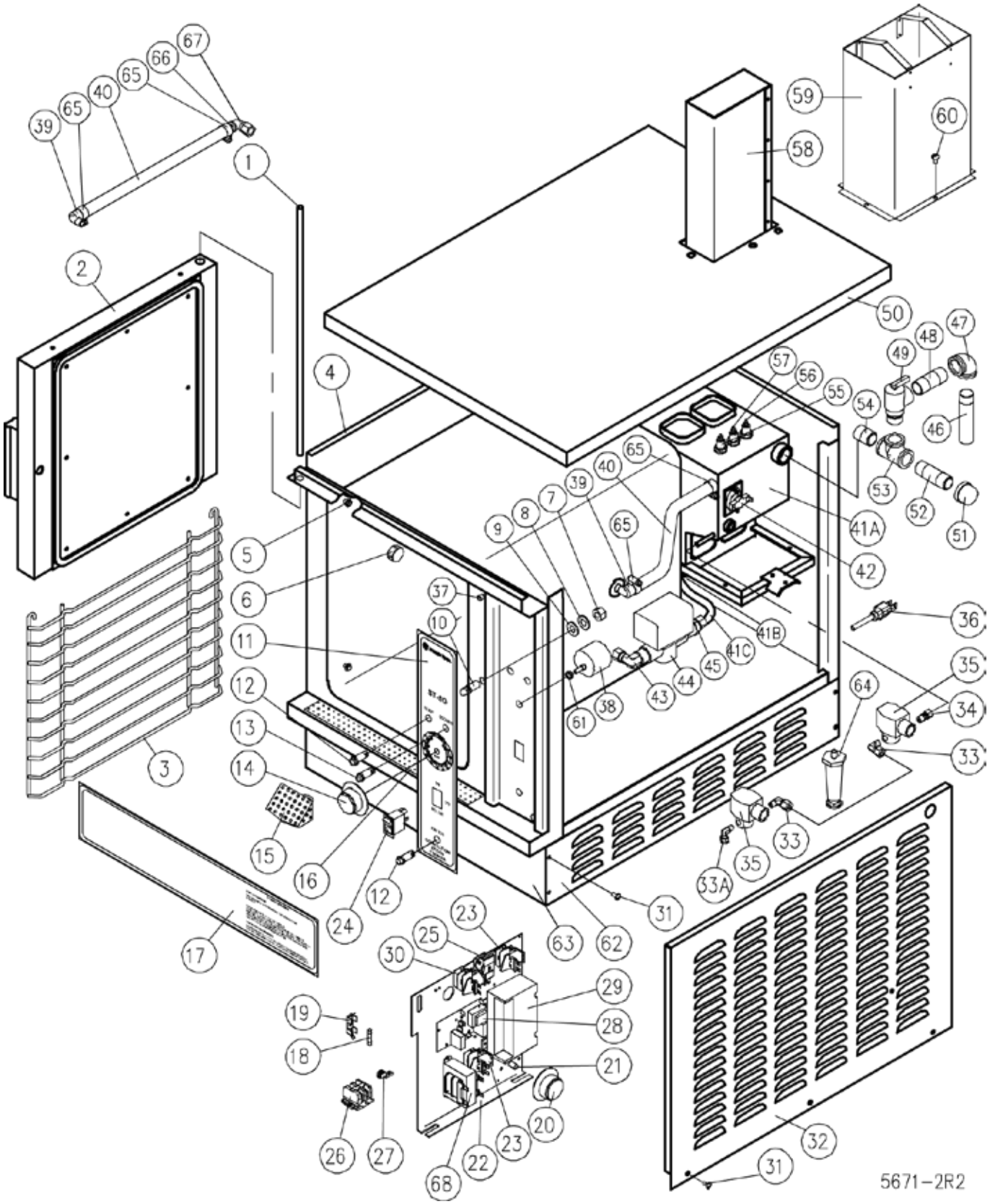


MARKET FORGE, ST-5G R.O. (120V)



MARKET FORGE, ST-5G R.O (220V)

MAIN ASSEMBLY



MAIN ASSEMBLY

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	97-6364	HINGE ROD	1
2	97-6173	DOOR ASSEMBLY	1
3	97-6175	PAN RACK	2
4	97-6183	LEFT HAND SIDE AND BACK PANEL	1
5	97-6340	RACK PIN ASSEMBLY	4
6	97-6300	STEAM DIVERTER	2
7	~NPN~	HEX NUT	1
8	~NPN~	LOCK WASHER	1
9	97-6302	WASHER	1
10	97-6178	STRIKER	1
11	97-6184	CONTROL LEXAN	1
12	97-6170	PILOT LIGHT - GREEN	2
13	97-6171	PILOT LIGHT - RED	1
14	98-6046	DIAL	1
15	97-6365	COMPARTMENT STRAINER	1
16	97-6177	PERFORATED DOOR TROUGH	1
17	97-6185	OPERATION INSTRUCTION DECAL	1
18*	97-6186	FUSE, 2A, 250V (120V UNIT)	1
18*	98-6134	FUSE, 1A, 250V (220V UNIT)	1
19	97-5864	FUSE HOLDER	1
20	97-6179	DIAL	1
21	97-5048	OPERATING THERMOSTAT	1
22	97-6366	COMPONENT MOUNTING BOARD	1
23	97-6172	RELAY	2
24	97-6367	POWER SWITCH	1
25	97-6190	BUZZER	1
26	10-6962	END SECTION	1
26	10-6963	TERMINAL BLOCK SECTION	2
27	97-5052	GROUND LUG	1
28*	97-6194	LEVEL CONTROL, 10K, OHM, 120V	1
28*	97-6200	LEVEL CONTROL, 1 M, OHM (OPTIONAL)	2
29	97-6913	IGNITION MODULE, INTERMITTENT PILOT	1
30	97-6193	RELAY, DPDT	1
31	~NPN~	SCREW, 10-32 x 1/2	17
32	97-6201	RIGHT PANEL	1
33	97-6188	ELBOW, 3/8 C x 1/8 MPT	2
33A	98-6089	ELBOW, 1/4 C x 1/8 MPT	1
34	98-6123	CONNECTOR, 1/4 C x 1/8 MPT	1
35	97-6282	SOLENOID VALVE	2
36	97-5702	CORD SET, 120V	1
37	97-6191	DOOR SWITCH	1
37	97-6301	SWITCH ACTUATOR C/W CLIP	1

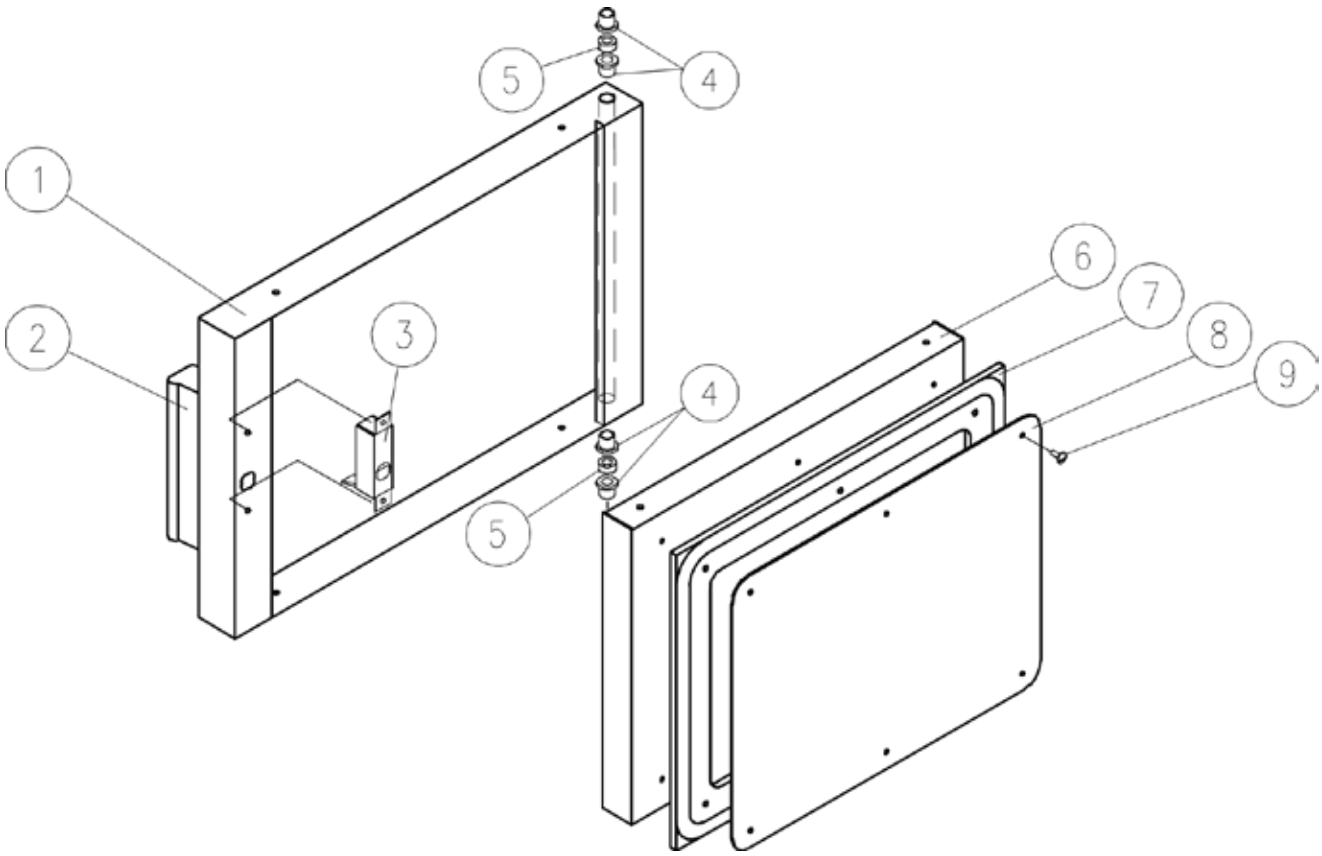
MAIN ASSEMBLY

ITEM	PART NUMBER	DESCRIPTION	QTY.
38	08-6464	TIMER	2
39	97-6331	HOSE BARB ELBOW, 1/2 C x 1/4 MPT	1
40*	97-7100	STEAM HOSE 1/2 x 13”	1
41A	97-6262	GENERATOR TANK	1
41B	97-6436	ELBOW 5/8C x 3/8 MPT	1
41C	97-7102	DRAIN TUBE	
42	97-6196	HIGH LIMIT SENSOR	1
43	97-6208	ELBOW, 1/2 C x 3/4 MPT	1
44	97-6210	BLOWDOWN SOLENOID	1
45	97-6209	CONNECTOR, 5/8 C x 3/4 MPT	1
46	97-6368	DOWN TUBE	1
47	97-6202	ELBOW, 3/4	1
48	97-6369	NIPPLE, 3/4 x 2 1/2	1
49	97-6219	RELIEF VALE, 5 PSI	1
50	97-6217	TOP COVER	1
51	97-6370	CAP, 3/4	1
52	97-6371	NIPPLE, 3/4 X 3 1/2	1
53	97-6203	TEE, 3/4	1
54	97-6204	CLOSE NIPPLE, 3/4	1
55	97-6212	PROBE- LOW LEVEL CUT OFF	1
56	97-6372	PROBE-HIGH LEVEL	1
57	976213	PROBE-LOW LEVEL	1
58	97-6215	FLUE ASSEMBLY	1
59	97-6216	FLUE COVER ASSEMBLY	1
60	~NPN~	SCREW, 1/4-20 x 1/2	6
61	98-6047	ROTARY SHAFT SEAL	1
62**	97-6223	RIGHT HAND SIDE RISER	1
*	97-6222	LEFT HAND SIDE RISER	1
63	97-6220	FRONT RISER	1
*	97-6221	REAR RISER	1
64	97-6211	APPLIANCE LEG	4
65*	97-7103	HOSE CLAMP	4
66*	97-7104	HOSE BARB, 1/2 x 1/4 MPT	1
67*	97-6207	ELBOW, 1/2C x 1/4 MPT	1
68*	97-5701	TRANSFORMER, 115-24	1
69	97-6225	WIRE HARNESS	1
70*	97-5619	THERMOSTAT BULB FITTING	1
71*	97-6226	WATER SUPPLY CONNECTOR	2
72*	98-6138	TRANSFORMER, 100VA, 200-240/120V, (220V UNITS)	1

** Not Shown.*

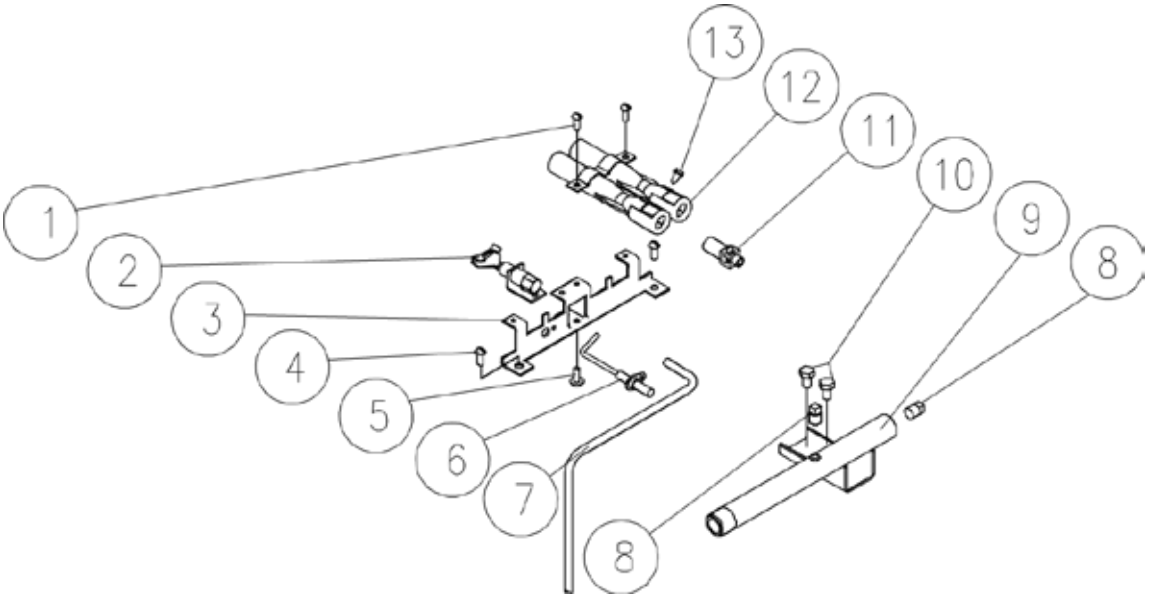
*** Select as Required.*

DOOR ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	97-6227	DOOR FRAME	1
2	97-6231	DOOR HANDLE ASSEMBLY	1
--	97-6235	DOOR HANDLE DECAL	1
3	97-6232	LATCH ASSEMBLY	1
4	97-6261	BUSHING SPACER	4
5	97-6236	UPPER & LOWER SPACER	1 ea.
6	97-6230	DOOR PANEL	1
7	97-6228	DOOR GASKET	1
8	97-6229	GASKET PLATE	1
9	97-6233	GASKET PANEL SCREWS	8
10	97-6173	DOOR ASSEMBLY	1

BURNER, PROPANE AND NATURAL GAS ASSEMBLY

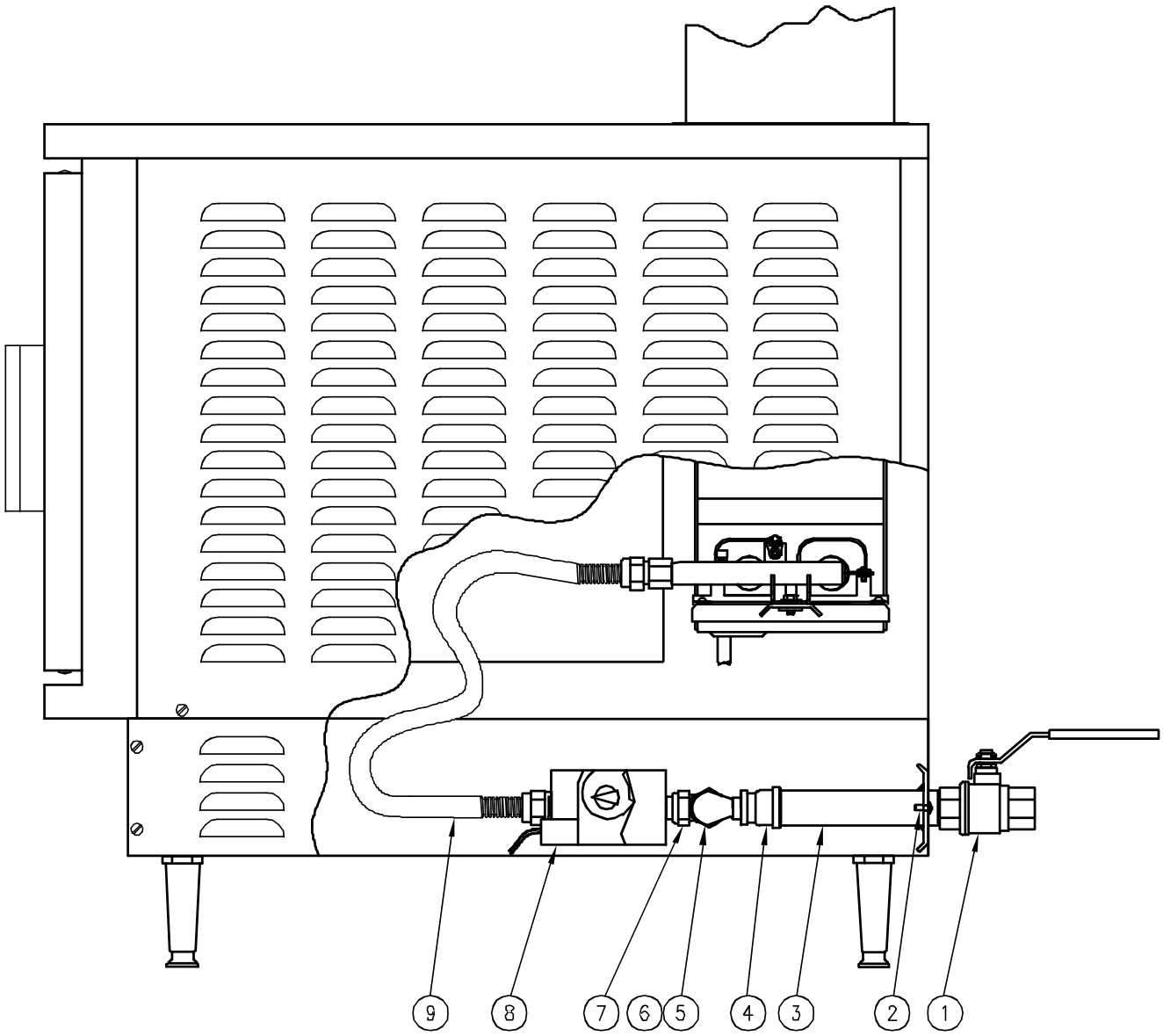


ITEM	PART NUMBER	DESCRIPTION	QTY.
1	~NPN~	HEX SHELF TAPPING SCREW, 8-32 x 1/4	4
2**	97-6244	PILOT BURNER, LIQUID PROPANE	1
	97-6465	PILOT BURNER, NATURAL GAS	1
3	97-6245	BURNER MOUNTING BRACKET	1
4	~NPN~	MACHINE SCREW, 10-32 x 3/8	2
5	~NPN~	MACHINE SCREW, 10-32 x 1/4	2
6	97-6237	SPARK ELECTRODE	1
7	97-6533	PILOT TUBE	1
8	98-6124	PIPE PLUG, 1/8 MPT	1
9**	97-6239	GAS MANIFOLD ASSY, NATURAL GAS	1
	97-6247	GAS MANIFOLD ASSY, L.P.	1
10	~NPN~	HEX CAP SCREW, 1/4-20 x 1/2	2
11**	97-6535	JET ORIFICE, #64, L.P.	4
	97-6498	JET ORIFICE, #53, NATURAL GAS	4
12**	97-6238	TWIN BURNERS, NATURAL GAS	2
	97-6246	TWIN BURNERS, L.P.	2
13	~NPN~	SHEET METAL SCREW	4

** Not Shown.*

*** Select as Required.*

GAS PLUMBING AND VALVE ASSEMBLY



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	97-6249	BALL VALVE, 3/4	1
2	~NPN~	SCREW, #10-32 x 1/2	2
3	97-6250	GAS SUPPLY PIPE ASSEMBLY	1
4	98-6112	REDUCING COUPLING	1
5	97-6251	90^{O} STREET ELBOW	1
6	98-6109	CLOSE NIPPLE, 1/2	1
7	98-6122	UNION ELBOW, 1/2	1
8**	97-5808	COMBINATION GAS CONTROL - NATURAL	1
8**	97-5809	COMBINATION GAS CONTROL - PROPANE	1
9	97-6252	FLEX TUBE, 1/2 x 18	1

*** Select as Required.*